quent results. The sense of smell I imagine to be explicable in the same way. In man this sense is in an almost rudimental condition, and consequently not often excited, but by actual contact with the Schneiderian membrane, of odorous particles or fumes. Yet a piece of musk shall be exposed for years without losing appreciably in weight, and I doubt not that the function of olfaction may be excited by undulations alone. So with the other special senses, and by analogy with what is called common sensibility, though this may be regarded as merely a modification of the sense of touch.

A further evidence for this hypothesis is that whatever excites a nerve of special sense produces in it its special phenomena; thus, irritation of the optic nerve causes only the sensation of light, while the auditory nerve can take on only the undulations of sound.

If then, as far as we can observe nervous action in its relation with the external world, undulation appears to be the *modus agendi*, the inference is allowable that all nervous action is referable to the same process. And it would appear that without regard to the mind (which is *sui generis*, and as to its nature entirely beyond our ken) nerve force presents analogies which entitle it to a place among the physical forces. It appears to be correlative with them, *i. e.* can be "mediately or immediately" transformed into them, or produced from them. The sensations of light, heat, sound, &c., may originate subjectively. In the contraction of muscular fibre both heat and sound are produced, motion being intermediate. Electricity again is correlative with taste and smell, sight, hearing, and general sensibility. The increased heat of fever is probably due in a great degree to the morbid nervous action, while here is also one source of the maintenance of the animal temperature.

The "physical forces" arise from without; nerve force finds an excitant also in the inner world—the will and the soul.

---

ART. VIII.—*Case of Oblique Fracture of the Femur treated by the use of Adhesive Plaster, as a means of producing Extension and Counter-Extension.* By J. F. HUBER, M. D., Lancaster, Pa.

ON Monday, January 9, 1860, J. E., aged fifty-nine years, was wheeling his scissor-sharpening apparatus on the icy pavement, when he fell; the shaft of his wheelbarrow struck him with great force on his right thigh. He was carried to his home, a distance of four squares. One hour after the accident had occurred I saw him, and discovered an oblique fracture of the femur about the junction of the middle with the inferior third, shortening the limb nearly one inch and a half.

Periostitis of a syphilitic character existed in the leg, and his body was covered with secondary syphilitic eruptions. I consented very reluctantly

to take charge of the case, for I apprehended much difficulty, if not complete failure, in securing firm and permanent union of the fractured bone, in consequence of his system being thoroughly saturated with syphilis, and debilitated greatly from his former habits of dissipation, which fortunately had been relinquished about one year ago.

I adjusted the apparatus recommended and described in a very elaborate manner by Dr. David Gilbert, in the April number of the *American Journal of the Medical Sciences*, for 1859. For want of adhesive plaster of sufficient length, the ordinary perineal band was temporarily applied. The patient was somewhat restless the succeeding day, and required some morphia to produce rest. The third day he was restless, had fever, and complained much of an unpleasant sensation where the perineal band rested. This band was removed, and the adhesive plaster applied in its stead. The irritation subsided immediately, he rested well the following night, and continued without pain or uneasiness during the entire period of treatment.

In order to improve the condition of his system and favour a desirable termination, drachm doses of the ferrated tincture of bark were administered four times a day for several weeks, with a nourishing diet. On the tenth day the bandages and splints were removed, in order to institute a careful inquiry into the condition of the fracture, after which they were adjusted as before. This was repeated again on the twenty-first day.

On the 20th of February, precisely six weeks after the occurrence of the accident, they were permanently removed, the bone was found firmly united, and the limb its original length. Locomotion was assisted for awhile with crutches; however these were soon dispensed with, the function of the extremity being fully restored.

It was not necessary to replace the adhesive bands; the ones first applied adhered firmly to the skin during the whole period of treatment. Care must be observed in the application of the adhesive strips; they should be uniformly heated by placing the linen back against some hot surface, until the adhesive material on the opposite side is thoroughly softened, when it should be applied very smoothly to the skin, so as to exclude air entirely.

Adhesive plaster, *properly* applied, forms the most admirable means of producing extension and counter-extension. It is far superior to any other method with which I am familiar, for the following reasons, viz:—

1. The excruciating pain so often produced at the heel, and in the perineum, when the gaiter and stuffed perineal band are applied, the consequent restlessness of the patient, with his earnest importunities to the surgeon for relief, are entirely obviated when adhesive plaster is properly applied as the means of producing extension and counter-extension.

2. The surgeon has perfect control of the extension and counter-extension, without being annoyed with pitiable requests and affecting entreaties from the patient and his friends, to relax the limb in order to obtain relief from his sufferings. He has power to increase or relax the extension at

any time, or to any degree he may desire, and thus secure the original length of the extremity after a firm union of the fragments has been effected. This was considered impossible in oblique fractures when the ordinary methods of treatment were practised.

3. The *perfect quietude* of the fragments at the seat of fracture, the absence of irritation and irritative fever, the great comfort enjoyed by the patient, consequently his non-interference with the retentive apparatus, will secure union of the fractured bone in at least twenty-five per cent. less time than by the usual methods of treatment.

4. The adhesive plaster counter-extending bands require no trouble by way of readjustment every day or two, which is so necessary in the old method.

5. If the adhesive plaster be carefully applied, the bandages and splints readjusted when they become relaxed by the diminution of the swelling of the limb, and osseous union is about taking place, the patient will require but little attention afterwards. In consequence of the above facts, this method is best suited to country and all private practice, especially when the attending surgeon is not constantly at hand.

---

ART. IX.—*On the Poisonous Effects resulting from the Employment of Arsenical Preparations in the Arts.* By M. CAREY LEA, Esq.

MUCH attention has been attracted of late years in Europe to the increasing use of arsenical pigments in matters connected with domestic economy. Formerly, when Scheele's green and orpiment were the chief colouring substances into the composition of which arsenic entered, their comparatively limited use rendered their poisonous character of less importance; but since the discovery of the substance sold under the name of Schweinfurt green, Swedish green, Mitis green, &c., the case is different. This substance, the aceto-arsenite of copper, obtained by boiling together green verdigris and white arsenic, possesses the finest colour of all known green pigments: this fact, together with its easy production from inexpensive materials, has caused a great extension of its use, and it is time that the impropriety of employing so deleterious a substance should be brought home to those who use it in their manufactures.

The immense extension which its employment has received, even in this country, may be judged of by the following facts:—

The author had recently two rooms papered with different green papers, obtained from different manufacturers. On examination it proved that the green colouring matter in both papers was arsenical. The border was then examined with a like result. The author procured three different specimens